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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

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NGUYEN, C

ART UNIT

PAPER NUMBER

2732

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09/15/99

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/252,551

Applicant(s)

Samueli et al.

Examiner

Chau T. Nguyen

Group Art Unit

2732



Responsive to communication(s) filed on Feb 18, 1999

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 1-144 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 1-144 is/are rejected.

Claim(s) _____ is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following:

- a) The Declaration does not state whether the inventor is a sole or joint inventor of the invention claimed.
- b) The deceptive intent error statement only refers to those errors listed. Are there others?

Claims 1-144 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

2. The person who signed the submission establishing ownership interest has failed to state his/her capacity to sign for the corporation or other business entity, and he/she has not been established as being authorized to act on behalf of the assignee. See MPEP § 324.

It would be acceptable for a person, other than a recognized officer, to execute a submission establishing ownership interest, provided the record for the application includes a statement that the person is empowered to sign a submission establishing ownership interest and/or act on behalf of the organization.

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Accordingly, a new submission establishing ownership interest which includes such a statement above, will be considered to be executed by an appropriate official of the assignee. A separately filed paper referencing the previously filed submission establishing ownership interest and containing a proper empowerment statement would also be acceptable.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 104-110, 116, and 119-122 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The step of adjusting the phase of the ... the timing signals recited in claims 104 and 116 is not supported by the specification. As understood, only local clock signals such as the master clock or the baud clock can be adjusted to synchronize with the received signals, and the received signals cannot be adjusted as now claimed.

The steps of operating upon the digital signals and using the timing recovery of claim 119 and the step of regulating the automatic gain control of the analog signals in

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accordance with the regulated gain of the digital signal recited in claim 123 are not supported by the original disclosure.

5. Claims 104-114, 131-139 and 141-144 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 104, the reference to the “predetermined characteristics at particular phases” (line 2) is not clear. Applicants are requested to reference the predetermined characteristics at particular phases, the received signals and the timing signals to the specification, so metes and bound can be determined from the claim language. According to col. 8-9 and Fig. 11, the timing signals correspond to the preambles shown in Fig. 5, and they are the same as the received signals. If so, it is not seen how the same signals are processed and used to adjusted themselves as claimed.

~~OK~~ In claims 105 and 106, the text in lines 5-6 is confusing since it is not clear what is meant by “constitute the timing signals.”

In claim 108, it is not clear what is meant by “the adjustments in the phases ... constitute the data signals in the packet.”

In claims 111 and 113, the reference to the selecting times and the predicted times is not clear from the specification. In addition, it is not clear if the timing signals

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of line 4 are related to the signal packets of line 3. Claims 115 and 117 have the same problem.

Claims 131-133, 135-137, 139, 141 and 143 are indefinite since an apparatus claim should not depend on a method claim. It is noted that claims 127-129 are method claims.

In claims 134 and 144, the first timing loop of line 2 lacks antecedent basis.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 104-118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rossi in view of the admitted prior art.

As for claims 104-106, 108, 109, 111, 113, and 115-117, in U.S. patent No. 5,276,711 Rossi shows a receiver for receiving data signals (Fig. 1). The A/D

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converter outputs discrete time signals (timing signals) having phase and amplitude. The sampling times and zero crossing time are the actual times, and the baud rate clock signals define the predict times. The baud rate clock signals are adjusted according to the phase differences between the actual time and the rate clock signals. See col. 6, lines 3-22. Rossi does not recite that the data signals are in the form of packets.

It is common practice in the art to transmit data in the form of packets as evidenced by the admitted prior art. As admitted at col. 3-4, in Ethernet networks data is transmitted in the form of Ethernet packets, and each packet has a preamble. To transmit data in the form of packets would have been obvious to one of ordinary skill in the art, and the motivation for doing so would have been to avoid retransmitting a long message if errors occur within a portion of the message.

As for claims 107, 112, 114 and 118, the symbol detector 6 determines the amplitude of the data.

As for claim 110, adjustment made for first ones of symbols in the preamble of each packet would have been obvious to one skilled in the art since there is no need to make further adjustment if the local baud clock is in synchronism with the received symbols.

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8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 119, 120, 126, and 127 are rejected under 35 U.S.C. 102(b) as being anticipated by Schenk (U.S. patent No. 5,065,412).

In Fig. 1 of the '412 patent, Schenk shows an A/D converter for receiving analog signals from twisted pairs of wires and converting the analog signals to digital signals, the loop filter SF and the phase discriminator PD operate on the digital signals to provide phase control signals (timing recovery signals) indicating changes of the digital signals, and the adjusting unit INT use the phase control signals regulate the sampling frequency of the A/D converter. See col. 3, line 25 to col. 4, line 33.

As for claim 126, the digital equalization is provided by the equalizer VEZ and NEZ depicted in Fig. 1 and the decision element ENT recovers the amplitudes of the digital signal as claimed.

10. Claims 121-125, 127, 128, and 129 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schenk (the '412 patent) in view of Motley et al. (U.S. patent No. 4,597,089).

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Schenk does not show providing automatic gain control (AGC) to the analog signals. In the '089 patent, Motley et al disclose an AGC unit 35 connected to a telephone lines for providing an automatic gain control to analog signals to be applied to an A/D converter; see Fig. 3 and col. 4, lines 6-10. One skilled in the art would have recognized that signals transmitted via twisted pairs of wires experience attenuation. Therefore, to use the AGC unit of Motley et al in combination with the A/D converter of Schenk would have been obvious to one of ordinary skill in the art since Motley et al explicitly suggest that an AGC unit provides the desired signal level.

11. Claims 130 and 140 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Schenk (the '412 patent).

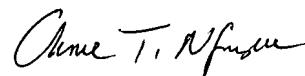
As shown in Fig. 3 and 4, the admitted prior art discloses all that is claimed except an A/D converter and an equalizer at each receiver. As described above, Schenk shows an A/D converter and an equalizer. To use an A/D converter and an equalizer at each receiver of the admitted prior art would have been obvious to one of ordinary skill in the art, and the motivation/suggestion for doing so would have been to eliminate "most of the distortion caused by the electrical properties of the two-wired lines" (Schenk, col. 3, lines 48-50).

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau T. Nguyen whose telephone number is (703) 308-5340. The examiner can normally be reached on Monday through Friday from 7AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Olms, can be reached on (703) 305-4703. The fax phone number for this Group is (703) 308-9051.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Chau T. Nguyen
Primary Examiner